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corrected PG4939A sequence listing.txt

SEQUENCE LISTING

EPO - DG 1

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(63)

<110> Ellis, Jon
Ashman, Claire

<120> Vaccine

<130> PG4939A

<140> PCT/GB03/003721

<141> 2003-08-28

<160> 68

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 112

<212> PRT

<213> Homo Sapiens

<400> 1

Gly	Pro	Val	Pro	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu
1			5				10					15		
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser
			20				25					30		Met
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu
			35				40					45		Glu
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln
			50				55				60			Arg
Met	Leu	Ser	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe
65					70					75				80
Ser	Leu	His	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val
				85					90				95	Lys
Asp	Leu	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe
			100					105					110	Asn

<210> 2

<211> 111

<212> PRT

<213> Mus Musculus

<400> 2

Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu	Thr	Leu	Lys	Glu
1			5					10					15	Leu
Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Thr	Pro	Leu	Cys
			20					25					30	Asn
Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala	Gly	Gly	Phe	Cys
			35				40					45		Val

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Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys	Asn	Ala	Ile	Tyr	Arg
50						55					60				
Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg	Lys	Ala	Pro	Thr	Thr
65					70					75					80
Val	Ser	Ser	Leu	Pro	Asp	Thr	Lys	Ile	Glu	Val	Ala	His	Phe	Ile	Thr
				85					90					95	
Lys	Leu	Leu	Ser	Tyr	Thr	Lys	Gln	Leu	Phe	Arg	His	Gly	Pro	Phe	
			100					105					110		

<210> 3
 <211> 111
 <212> PRT
 <213> Sus scrofa

Gly	Pro	Val	Pro	Pro	His	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu
1				5					10					15	
Leu	Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Thr	Pro	Leu	Cys	Asn	Gly	Ser
			20					25					30		
Met	Val	Trp	Ser	Val	Asn	Leu	Thr	Thr	Ser	Met	Gln	Tyr	Cys	Ala	Ala
		35					40					45			
Leu	Glu	Ser	Leu	Ile	Asn	Ile	Ser	Asp	Cys	Ser	Ala	Ile	Gln	Lys	Thr
	50					55					60				
Gln	Arg	Met	Leu	Ser	Ala	Leu	Cys	Ser	His	Lys	Pro	Pro	Ser	Glu	Gln
65					70					75					80
Val	Pro	Gly	Lys	His	Ile	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe
				85					90					95	
Val	Lys	Asp	Leu	Leu	Lys	His	Leu	Arg	Met	Ile	Phe	Arg	His	Gly	
			100					105					110		

<210> 4
 <211> 112
 <212> PRT
 <213> Bos taurus

Ser	Pro	Val	Pro	Ser	Ala	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Val	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Leu	Asn	Leu	Thr	Ser	Ser	Met	Tyr	Cys	Ala	Ala	Leu	Asp
		35					40					45			
Ser	Leu	Ile	Ser	Ile	Ser	Asn	Cys	Ser	Val	Ile	Gln	Arg	Thr	Lys	Lys
	50					55					60				
Met	Leu	Asn	Ala	Leu	Cys	Pro	His	Lys	Pro	Ser	Ala	Lys	Gln	Val	Ser
65					70					75					80
Ser	Glu	Tyr	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Leu	Lys
				85					90					95	
Asp	Leu	Leu	Arg	His	Ser	Arg	Ile	Val	Phe	Arg	Asn	Glu	Arg	Phe	Asn
			100					105					110		

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<210> 5
 <211> 111
 <212> PRT
 <213> Canis familiaris

<400> 5
 Ser Pro Val Thr Pro Ser Pro Thr Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Ala Ser Leu Cys Asn Gly Ser Met Val
 20 25 30
 Trp Ser Val Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser
 35 40 45
 Leu Ile Asn Val Ser Asp Cys Ser Ala Ile Gln Arg Thr Gln Arg Met
 50 55 60
 Leu Lys Ala Leu Cys Ser Gln Lys Pro Ala Ala Gly Gln Ile Ser Ser
 65 70 75 80
 Glu Arg Ser Arg Asp Thr Lys Ile Glu Val Ile Gln Leu Val Lys Asn
 85 90 95
 Leu Leu Thr Tyr Val Arg Gly Val Tyr Arg His Gly Asn Phe Arg
 100 105 110

<210> 6
 <211> 111
 <212> PRT
 <213> Rattus

<400> 6
 Gly Pro Val Arg Arg Ser Thr Ser Pro Pro Val Ala Leu Arg Glu Leu
 1 5 10 15
 Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Lys Thr Ser Leu Cys
 20 25 30
 Asn Ser Ser Met Val Trp Ser Val Asp Leu Thr Ala Gly Gly Phe Cys
 35 40 45
 Ala Ala Leu Glu Ser Leu Thr Asn Ile Ser Ser Cys Asn Ala Ile His
 50 55 60
 Arg Thr Gln Arg Ile Leu Asn Gly Leu Cys Asn Gln Lys Ala Ser Asp
 65 70 75 80
 Val Ala Ser Ser Pro Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Ile
 85 90 95
 Ser Lys Leu Leu Asn Tyr Ser Lys Gln Leu Phe Arg Tyr Gly His
 100 105 110

<210> 7
 <211> 111
 <212> PRT
 <213> Cynomolgus

<400> 7

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Ser	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70					75					80
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
				85					90					95	
Asp	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Gln	Phe	Asn	
			100					105					110		

<210> 8
 <211> 112
 <212> PRT
 <213> Rhesus

<400> 8

Ser	Pro	Val	Pro	Arg	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70					75					80
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
				85					90					95	
Asp	Leu	Leu	Val	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn
			100					105					110		

<210> 9
 <211> 112
 <212> PRT
 <213> marmoset

<400> 9

Gly	Pro	Val	Pro	Pro	Tyr	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20					25					30		
Val	Trp	Ser	Ile	Asn	Met	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
		35					40					45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
	50					55					60				

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Met	Leu	Ser	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70					75					80
Ser	Leu	Leu	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
			85					90						95	
Asp	Leu	Leu	Arg	His	Leu	Arg	Lys	Leu	Phe	His	Gln	Gly	Thr	Phe	Asn
			100					105					110		

<210> 10

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 10

Gly	Pro	Val	Pro	Pro	Ser	Ser	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Ala	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20				25						30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu	Asp
		35				40						45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Arg	Thr	Gln	Arg
		50				55					60				
Ile	Leu	Ser	Ala	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75						80
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Thr
			85					90						95	
Asp	Leu	Leu	Val	His	Leu	Lys	Arg	Leu	Phe	Arg	Gln	Gly	Thr	Phe	Asn
			100					105					110		

<210> 11

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 11

Gly	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10					15	
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
			20				25						30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu	Glu
		35				40						45			
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
		50				55					60				
Met	Leu	Gly	Gly	Phe	Cys	Pro	His	Lys	Phe	Asn	Asn	Phe	Thr	Val	Ser
65					70				75						80

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Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Thr
      85                      90                      95
Lys Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys
      100                      105                      110
Lys Leu Phe Arg Glu Gly Arg Phe Asn
      115                      120

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<210> 12
 <211> 133
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

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<400> 12
Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1          5          10          15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu
      20          25          30
Leu Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
      35          40          45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
      50          55          60
Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
      65          70          75          80
Glu Lys Thr Gln Arg Met Leu Gly Gly Phe Cys Pro His Lys Val Ser
      85          90          95
Ala Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val
      100          105          110
Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg
      115          120          125
Glu Gly Arg Phe Asn
      130

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<210> 13
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

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<400> 13
Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu
 1          5          10          15
Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
      20          25          30
Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val
      35          40          45

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Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys	Asn	Ala	Ile	Tyr	Arg
50						55				60					
Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg	Lys	Phe	Asn	Asn	Phe
65					70				75						80
Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser	Ala	Ser	His	Leu
				85					90					95	
Glu	Asp	Thr	Lys	Ile	Glu	Val	Ala	His	Phe	Ile	Thr	Lys	Leu	Leu	Ser
			100					105					110		
Tyr	Thr	Lys	Gln	Leu	Phe	Arg	His	Gly	Pro	Phe					
		115					120								

<210> 14

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 14

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1				5					10					15	
Ala	Ser	His	Leu	Glu	Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu
			20					25					30		
Thr	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln
		35				40						45			
Thr	Pro	Leu	Cys	Asn	Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala
	50				55						60				
Gly	Gly	Phe	Cys	Val	Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys
65				70					75						80
Asn	Ala	Ile	Tyr	Arg	Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg
			85						90					95	
Lys	Ala	Pro	Thr	Val	Ser	Ser	Leu	Pro	Asp	Thr	Lys	Ile	Glu	Val	
			100				105					110			
Ala	His	Phe	Ile	Thr	Lys	Leu	Leu	Ser	Tyr	Thr	Lys	Gln	Leu	Phe	Arg
		115				120						125			
His	Gly	Pro	Phe												
		130													

<210> 15

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 15

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1				5					10					15	

corrected PG4939A sequence listing.txt

```

Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Val
20 25 30
Thr Leu Lys Glu Leu Ile Glu Glu Leu Thr Asn Ile Thr Gln Asp Gln
35 40 45
Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
50 55 60
Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
65 70 75 80
Asn Ala Ile Phe Arg Thr Gln Arg Ile Leu His Ala Leu Cys Asn Arg
85 90 95
Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
100 105 110
Ala His Phe Ile Thr Lys Leu Leu Thr Tyr Thr Lys Asn Leu Phe Arg
115 120 125
Arg Gly Pro Phe
130

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<210> 16

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 16

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Tyr Val His Ser Asp Gly Ser Tyr Pro Lys Asp Lys Phe Glu Lys Ile
1 5 10 15
Asn Gly Thr Trp Tyr Tyr Phe Asp Ser Ser Gly Tyr Met Leu Ala Asp
20 25 30
Arg Trp Arg Lys His Thr Asp Gly Asn Trp Tyr Trp Phe Asp Asn Ser
35 40 45
Gly Glu Met Ala Thr Gly Trp Lys Lys Ile Ala Asp Lys Trp Tyr Tyr
50 55 60
Phe Asn Glu Glu Gly Ala Met Lys Thr Gly Trp Val Lys Tyr Lys Asp
65 70 75 80
Thr Trp Tyr Tyr Leu Asp Ala Lys Glu Gly Ala Met Gln Tyr Ile Lys
85 90 95
Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Gly Val Met Val Ser Asn
100 105 110
Ala Phe Ile Gln Ser Ala Asp Gly Thr Gly Trp Tyr Tyr Leu Lys Pro
115 120 125
Asp Gly Thr Leu Ala Asp Arg Pro Glu Gly Pro Val Pro Pro Ser Ser
130 135 140
Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln
145 150 155 160
Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr
165 170 175
Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly
180 185 190
Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro

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	195		200		205												
His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser	Ser	Leu	Arg	Val	Arg	Asp	Thr		
	210					215					220						
Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Thr	Asp	Leu	Leu	Val	His	Leu	Lys		
225					230					235					240		
Arg	Leu	Phe	Arg	Gln	Gly	Thr	Phe	Asn									
					245												

<210> 17
 <211> 220
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

<400> 17																	
Ser	Ser	His	Ser	Ser	Asn	Met	Ala	Asn	Thr	Gln	Met	Lys	Ser	Asp	Lys		
1				5					10					15			
Ile	Ile	Ile	Ala	His	Arg	Gly	Ala	Ser	Gly	Tyr	Leu	Pro	Glu	His	Thr		
			20					25					30				
Leu	Glu	Ser	Lys	Ala	Leu	Ala	Phe	Ala	Gln	Gln	Ala	Asp	Tyr	Leu	Glu		
		35					40					45					
Gln	Asp	Leu	Ala	Met	Thr	Lys	Asp	Gly	Arg	Leu	Val	Val	Ile	His	Asp		
	50					55					60						
His	Phe	Leu	Asp	Gly	Leu	Thr	Asp	Val	Ala	Lys	Lys	Phe	Pro	His	Arg		
65					70					75					80		
His	Arg	Lys	Asp	Gly	Arg	Tyr	Tyr	Val	Ile	Asp	Phe	Thr	Leu	Lys	Glu		
				85					90					95			
Ile	Gln	Ser	Leu	Glu	Met	Thr	Glu	Asn	Phe	Glu	Thr	Gly	Pro	Val	Pro		
			100					105					110				
Pro	Ser	Ser	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu	Ala	Asn	Ile	Thr		
		115					120					125					
Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met	Val	Trp	Ser	Ile		
	130					135					140						
Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu	Asp	Ser	Leu	Ile	Asn		
145					150					155					160		
Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Arg	Thr	Gln	Arg	Ile	Leu	Ser	Ala		
				165					170					175			
Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser	Ser	Leu	Arg	Val		
			180					185					190				
Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Thr	Asp	Leu	Leu	Val		
		195					200					205					
His	Leu	Lys	Arg	Leu	Phe	Arg	Gln	Gly	Thr	Phe	Asn						
	210					215					220						

<210> 18
 <211> 133
 <212> PRT
 <213> Artificial Sequence

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<210> 20
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

<400> 20
 Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
 50 55 60
 Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
 85 90 95
 Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Arg Phe Asn
 100 105 110

<210> 21
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

<400> 21
 Gly Pro Val Pro Pro Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
 50 55 60
 Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
 85 90 95
 Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Gln Gly Thr Phe Asn
 100 105 110

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<210> 22
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

<400> 22
 Gly Pro Val Pro Pro Ser Ser Ala Leu Arg Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Asp Lys Thr Gln Arg
 50 55 60
 Met Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95
 Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Asp Gly Arg Phe Asn
 100 105 110

<210> 23
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human Immunogen

<400> 23
 Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Arg Glu Leu
 1 5 10 15
 Ile Glu Glu Leu Val Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
 20 25 30
 Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Tyr Cys Ala
 35 40 45
 Ala Leu Glu Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Glu Lys
 50 55 60
 Thr Gln Arg Met Leu Gly Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
 65 70 75 80
 Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95
 Asp Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 100 105 110

<210> 24
 <211> 16

corrected PG4939A sequence listing.txt

<212> PRT

<213> Homo Sapiens

<400> 24

Pro	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu	Val	Asn	Ile	Thr
1				5				10						15	

<210> 25

<211> 10

<212> PRT

<213> Homo Sapiens

<400> 25

Met	Tyr	Cys	Ala	Ala	Leu	Glu	Ser	Leu	Ile
1				5				10	

<210> 26

<211> 9

<212> PRT

<213> Homo sapiens

<400> 26

Lys	Thr	Gln	Arg	Met	Leu	Ser	Gly	Phe
1				5				

<210> 27

<211> 17

<212> PRT

<213> Homo sapiens

<400> 27

Ala	Gln	Phe	Val	Lys	Asp	Leu	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg
1				5				10						15	

Glu

<210> 28

<211> 8

<212> PRT

<213> Homo sapiens

<400> 28

Gly	Pro	Val	Pro	Pro	Ser	Thr	Ala
1				5			

<210> 29

<211> 24

corrected PG4939A sequence listing.txt

<212> PRT

<213> Homo sapiens

<400> 29

Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met	Val	Trp
1				5					10					15	
Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met								
			20												

<210> 30

<211> 7

<212> PRT

<213> Homo sapiens

<400> 30

Ile	Asn	Val	Ser	Gly	Cys	Ser
1				5		

<210> 31

<211> 19

<212> PRT

<213> Homo sapiens

<400> 31

Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser	Ser	Leu	His	Val
1				5					10					15	
Arg	Asp	Thr													

<210> 32

<211> 13

<212> PRT

<213> Homo sapiens

<400> 32

Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn
1				5					10			

<210> 33

<211> 14

<212> PRT

<213> unknown

<220>

<223> Tetanus toxin peptide

<400> 33

Gln	Tyr	Ile	Lys	Ala	Asn	Ser	Lys	Phe	Ile	Gly	Ile	Thr	Glu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

corrected PG4939A sequence listing.txt

1

5

10

<210> 34
<211> 21
<212> PRT
<213> unknown

<220>

<223> Tetanus toxin peptide

<400> 34

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1				5					10					15	
Ala	Ser	His	Leu	Glu											
			20												

<210> 35

<211> 21

<212> PRT

<213> Plasmodium falciparum

<400> 35

Asp	Ile	Glu	Lys	Lys	Ile	Ala	Lys	Met	Glu	Lys	Ala	Ser	Ser	Val	Phe
1				5					10					15	
Asn	Val	Val	Asn	Ser											
			20												

<210> 36

<211> 15

<212> PRT

<213> Measles virus

<400> 36

Leu	Ser	Glu	Ile	Lys	Gly	Val	Ile	Val	His	Arg	Leu	Glu	Gly	Val
1				5					10					15

<210> 37

<211> 15

<212> PRT

<213> Hepatitis B virus

<400> 37

Phe	Phe	Leu	Leu	Thr	Arg	Ile	Leu	Thr	Ile	Pro	Gln	Ser	Leu	Asp
1				5					10					15

<210> 38

<211> 19

corrected PG4939A sequence listing.txt

<212> PRT

<213> Corynebacterium diphtheriae

<400> 38

Pro	Val	Phe	Ala	Gly	Ala	Asn	Tyr	Ala	Ala	Trp	Ala	Val	Asn	Val	Ala
1				5					10				15		
Gln Val Ile															

<210> 39

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 39

Val	His	His	Asn	Thr	Glu	Glu	Ile	Val	Ala	Gln	Ser	Ile	Ala	Leu	Ser
1				5					10					15	
Ser Leu Met Val															
20															

<210> 40

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 40

Gln	Ser	Ile	Ala	Leu	Ser	Ser	Leu	Met	Val	Ala	Gln	Ala	Ile	Pro	Leu
1				5					10					15	
Val Gly Glu Leu															
20															

<210> 41

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 41

Val	Asp	Ile	Gly	Phe	Ala	Ala	Tyr	Asn	Phe	Val	Glu	Ser	Ile	Ile	Asn
1				5					10					15	
Leu Phe Gln Val															
20															

<210> 42

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 42

corrected PG4939A sequence listing.txt

Gln Gly Glu Ser Gly His Asp Ile Lys Ile Thr Ala Glu Asn Thr Pro
1 5 10 15
Leu Pro Ile Ala
20

<210> 43
<211> 20
<212> PRT
<213> Corynebacterium diphtheriae

<400> 43
Gly Val Leu Leu Pro Thr Ile Pro Gly Lys Leu Asp Val Asn Lys Ser
1 5 10 15
Lys Thr His Ile
20

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 44
tccatgacgt tcctgacgtt
20

<210> 45
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 45
tctcccagcg tgcgccat
18

<210> 46
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 46
accgatgacg tcgccggtga cggcaccacg

corrected PG4939A sequence listing.txt

30

<210> 47

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial immunostimulatory oligonucleotide

<400> 47

tcgtcgtttt gtcgttttgt cggt

24

<210> 48

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial immunostimulatory oligonucleotide

<400> 48

tccatgacgt tcctgatgct

20

<210> 49

<211> 72

<212> DNA

<213> homo sapiens

<400> 49

tgtgatgttg accagctcct caatgagctc cctaagggtc agagggagag acacagatct

60

tggcaccggc cc

72

<210> 50

<211> 73

<212> DNA

<213> homo sapiens

<400> 50

aggagctggg caacatcaca caagaccaga ctcccctgtg caacggcagc atggtatgga

60

gtgtggacct ggc

73

<210> 51

<211> 72

<212> DNA

<213> homo sapiens

corrected PG4939A sequence listing.txt

<400> 51
gcaattggag atgttgggtca gggattccag ggctgcacag tacccgccag cggccaggtc
60
cacactccat ac
72

<210> 52
<211> 73
<212> DNA
<213> homo sapiens

<400> 52
tgaccaacat ctccaattgc aatgccatcg agaagacca gaggatgctg ggcggactct
60
gtaaccgcaa ggc
73

<210> 53
<211> 72
<212> DNA
<213> homo sapiens

<400> 53
aaactgggcc acctcgattt tggatcggg gaggctggag accgtagtgg gggccttgcg
60
gttacagagt cc
72

<210> 54
<211> 71
<212> DNA
<213> homo sapiens

<400> 54
aaatcgagggt ggcccagttt gtaaaggacc tgctcagcta cacaaagcaa ctgtttcgcc
60
acggcccctt c
71

<210> 55
<211> 28
<212> DNA
<213> homo sapiens

<400> 55
cgcgattcg ggccggtgcc aagatctg
28

<210> 56
<211> 37
<212> DNA

corrected PG4939A sequence listing.txt

<213> homo sapiens

<400> 56

ctccgctcga gtcgacttag aaggggccgt ggcgaaa
37

<210> 57

<211> 28

<212> DNA

<213> homo sapiens

<400> 57

cgcgcatccg ggccggtgcc aagatctg
28

<210> 58

<211> 6

<212> PRT

<213> homo sapiens

<400> 58

Glu Leu Ile Glu Glu Leu
1 5

<210> 59

<211> 4

<212> PRT

<213> homo sapiens

<400> 59

Asn Ile Thr Gln
1

<210> 60

<211> 5

<212> PRT

<213> homo sapiens

<400> 60

Ser Met Val Trp Ser
1 5

<210> 61

<211> 7

<212> PRT

<213> homo sapiens

<400> 61

Asp Thr Lys Ile Glu Val Ala

corrected PG4939A sequence listing.txt

1

5

<210> 62
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 62
ggccctgtgc ctccctctag cgccctcaag gagctcattg aggagctggc caacatcacc
60
cagaaccaga aggctccgct ctgcaatggc agcatgggat ggagcatcaa cctgacagct
120
ggcatgtact gtgcagccct ggactccctg atcaacgtgt caggctgcag tgccatcgag
180
cggacccaga ggatcttgag cgccttctgc ccgcacaagg tctcagctgg gcagttttcc
240
agcttgctgt tccgagacac caaatcgag gtggcccagt ttgtaacgga cctgctcgta
300
catttaaaga gactttttcg ccagggaacg ttcaac
336

<210> 63
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 63
ccgggacacg gagggagatc gcgggagttc ctcgagtaac tcctcgaccg gttgtagtgg
60
gtcttgggtct tccgaggcga gacgttaccg tcgtaccata cctcgtagtt ggactgtcga
120
ccgtacatga cacgtcggga cctgagggac tagttgcaca gteccgacgtc acggtagctc
180
gcctgggtct cctagaactc gcggaagacg ggcgtgttcc agagtcgacc cgtcaaaagg
240
tcgaacgcac aggctctgtg gttttagctc caccgggtca aacattgcct ggacgagcat
300
gtaaatttct ctgaaaaagc ggtcccttgc aagttg
336

<210> 64
<211> 747
<212> DNA
<213> Artificial Sequence

corrected PG4939A sequence listing.txt

<220>

<223> Human Immunogen

<400> 64

tacgtacatt ccgacggctc ttatccaaaa gacaagtttg agaaaatcaa tggcacttgg
60
tactactttg acagttcagg ctatatgctt gcagaccgct ggaggaagca cacagacggc
120
aactgggtact ggttcgacaa ctcaggcgaa atgggtacag gctggaagaa aatcgctgat
180
aagtgggtact atttcaacga agaaggtgcc atgaagacag gctgggtcaa gtacaaggac
240
acttgggtact acttagacgc taaagaaggc gccatgcaat acatcaaggc taactctaag
300
ttcattggta tcactgaagg cgtcatggta tcaaatgcct ttatccagtc agcggacgga
360
acaggctggg actacctcaa accagacgga aactggcag acaggccaga aggcctgtg
420
cctccctcta gcgcctcaa ggagctcatt gaggagctgg ccaacatcac ccagaaccag
480
aaggctccgc tctgcaatgg cagcatggta tggagcatca acctgacagc tggcatgtac
540
tgtgcagccc tggactccct gatcaacgtg tcaggctgca gtgccatcga gcggacccag
600
aggatcttga gcgccttctg cccgcacaag gtctcagctg ggcagttttc cagcttgctg
660
gtccgagaca ccaaaatcga ggtggcccag tttgtaacgg acctgctcgt acatttaaag
720
agactttttc gccagggaac gttcaac
747

<210> 65

<211> 660

<212> DNA

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 65

tcctctcatt cttctaacat ggcgaaacacc cagatgaagt ccgataaaat catcatcgcg
60
cacaggggag ctagcgggta tctgcctgag cacaccctgg agtccaaggc tctggcgttc
120
gccagcagg ctgactacct ggagcaggac ctggcgatga caaaggatgg ccgcctcgtg
180
gtgatccatg accattttct cgacggactg accgacgtcg ccaagaagtt cccccaccgc
240
cataggaagg acgggaggta ttacgtgatt gacttcaccc tcaaggagat ccagagcctg
300
gagatgaccg agaacttcga gaccggccct gtgcctccct ctagcgcct caaggagctc
360

corrected PG4939A sequence listing.txt

attgaggagc tggccaacat caccagaac cagaaggctc cgctctgcaa tggcagcatg
420
gtatggagca tcaacctgac agctggcatg tactgtgcag ccctggactc cctgatcaac
480
gtgtcaggct gcagtgccat cgagcggacc cagaggatct tgagcgcctt ctgcccgcac
540
aaggtctcag ctgggcagtt ttccagcttg cgtgtccgag acaccaaata cgaggtggcc
600
cagtttgtaa cggacctgct cgtacattta aagagacttt ttcgccaggg aacgttcaac
660

<210> 66
<211> 399
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 66
ttaaataatt ttaccgtag cttttggttg cgtgttccta aagtatctgc tagtcattta
60
gaaggccctg tgcctccctc tagcgccctc aaggagctca ttgaggagct ggccaacatc
120
accagaacc agaaggctcc gctctgcaat ggcagcatgg tatggagcat caacctgaca
180
gctggcatgt actgtgcagc cctggactcc ctgatcaacg tgtcaggctg cagtgccatc
240
gagcggaccc agaggatctt gagcgccttc tgcccgcaca aggtctcagc tgggcagttt
300
tccagcttgc gtgtccgaga caccaaaatc gaggtggccc agtttgtaac ggacctgctc
360
gtacatttaa agagactttt tcgccagggg acgttcaac
399

<210> 67
<211> 399
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 67
ttaaataatt ttaccgtag cttttggttg cgtgttccta aagtatctgc tagtcattta
60
gaaggccctg tgcctccctc tagcgccctc aagattctca ttgaggagct ggccaacatc
120
accagaacc agaaggctcc gctctgcaat ggcagcatgg tatggagcat caacctgaca
180
gctggcatgt actgtgcagc cctggactcc ctgatcaacg tgtcaggctg cagtgccatc

corrected PG4939A sequence listing.txt

240
gagcggaccc agaggatctt gagcgccttc tgcccgcaca aggtctcagc tgggcagttt
300
tccagcttgc gtgtccgaga caccaaaatc gaggtggccc agtttgtaac ggacctgctc
360
gtacatttaa agagactttt tcgccaggga acgttcaac
399

<210> 68
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 68
gggccggtgc caagatctgt gtctctccct ctgaccctta gggagctcat tgaggagctg
60
gtcaacatca cacaagacca gactcccctg tgcaacggca gcatggtatg gagtgtggac
120
ctggccgctg gcgggtactg tgcagccctg gaatccctga ccaacatctc caattgcaat
180
gccatcgaga agaccagag gatgctgggc ggactctgta accgcaaggc cccactacg
240
gtctccagcc tccccgatac caaaatcgag gtggcccagt ttgtaaagga cctgctcagc
300
tacacaaagc aactgtttcg ccacggcccc ttctaa
336

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